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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,346	07/02/2004	Hon-Yuan Leo	12851-US-PA	4345

31561 7590 08/04/2008

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER
XIAO, KE

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USA@JCIPGROUP.COM.TW
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Office Action Summary	Application No.	Applicant(s)	
	10/710,346	LEO ET AL.	
	Examiner	Art Unit	
	Ke Xiao	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4, 5, 7-9 and 13-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuzuki (US 5,745,093) in view of Koyama (US 6,380,919).

Regarding **Claim 1**, Tsuzuki teaches a liquid crystal panel (Tsuzuki, Fig. 4) comprising:

a display area having MxN pixels for providing MxN resolution, each of the pixels including K subpixels (Tsuzuki, Fig. 4 pixels in delta formation each with RGB subpixels);

a row driver having IxN scan lines coupled to the display area (Tsuzuki, Fig. 4 element 3 2xN scan lines); and

a column driver, receiving a pixel data including a subpixel data XT, YT, and ZT at period T, having JxM data lines coupled to the display area for cooperating with the row driver to complete driving M pixels on a same row in the display area after the row driver scans I times, wherein T is an integer (Tsuzuki, Fig. 4 RGB signals are steamed to the sample and hold circuits one pixel at a time), IxJ = K, and 1<I, J<K (Tsuzuki, Fig. 4, K is 3, I is 2 and J is 1.5), and the column driver includes:

an even column driver receiving a portion of the pixel data for driving an even portion of the JxM data lines in the display area, wherein the even column driver receives the subpixel data XT and ZT when the period T=4s, receives the subpixel data YT and ZT when the period T=4s+1, receives the subpixel data YT when the period T=4s+2, and receives the subpixel data XT when the period T=4s+3, s being an integer (Tsuzuki, Fig. 4, T=0 RB, T=1 BG, T=2 G, T=3 R); and

an odd column driver receiving a portion of the pixel data for driving an odd portion of the JxM data lines in the display area, wherein the odd column driver receives the subpixel data YT when the period T=4s, receives the subpixel data XT when the period T=4s+1, receives the subpixel data XT and ZT when the period T=4s+2, and receives the subpixel data YT and ZT when the period T=4s+3 (Tsuzuki, Fig. 4, T=0 G, T=1 R, T=2 RB, T=3 GB).

Tsuzuki fails to teach that the odd and even column drivers are disposed at opposite sides of the display area as claimed. Koyama teaches odd and even column drivers disposed at opposite sides of the display area (Koyama, Fig. 1 elements 101 and 104). It would have been obvious to one of ordinary skill in the art to dispose the odd and even column drivers of Tsuzuki at opposite sides of the display as taught by Koyama in order to allow for improved driving efficiency.

Regarding **Claim 7**, Tsuzuki teaches a method for driving a liquid crystal panel having a display area having MxN pixels for providing MxN resolution, each of the pixels including K subpixels (Tsuzuki, Fig. 4), the method comprising:

providing a pixel data including subpixel data XT, YT and ZT at period T, there T is an integer (Tsuzuki, Fig. 4, RGB):

inputting the subpixels data XT and ZT to an even column driver and providing the subpixel data YT to and odd column driver when the period T=4s, wherein s is an integer (Tsuzuki, Fig. 4, T=0 RB even G odd);

inputting the subpixels data YT and ZT to an even column driver and providing the subpixel data XT to and odd column driver when the period T=4s+1 (Tsuzuki, Fig. 4, T=1 BG even R odd);

inputting the subpixels data XT and ZT to an even column driver and providing the subpixel data YT to and odd column driver when the period T=4s+2 (Tsuzuki, Fig. 4, T=2 G even RB odd);

inputting the subpixels data XT and ZT to an even column driver and providing the subpixel data YT to and odd column driver when the period T=4s+3 (Tsuzuki, Fig. 4, T=3 R even BG odd);

scanning IxN scan lines in the display area in sequence (Tsuzuki, Fig. 4 scan lines are scanned in a progressive sequence); and

providing JxM subpixel data to JxM data lines in the display area after scanning each of the IxN scan lines to complete driving M pixels on a same row in the display area after scanning the scan lines for I times using the even column driver and the odd column driver (Tsuzuki, Fig. 4, two scan lines must be scanned for each pixel row);

where IxJ = K, and 1<I, J<K (Tsuzuki, Fig. 4, K is 3, I is 2 and J is 1.5).

Tsuzuki fails to teach that the odd and even column drivers are disposed at opposite sides of the display area as claimed. Koyama teaches odd and even column drivers disposed at opposite sides of the display area (Koyama, Fig. 1 elements 101 and 104). It would have been obvious to one of ordinary skill in the art to dispose the odd and even column drivers of Tsuzuki at opposite sides of the display as taught by Koyama in order to allow for improved driving efficiency.

Regarding **Claims 2 and 8**, Tsuzuki further teaches that K is 3, I is 2 and J is 1.5 (Tsuzuki, Fig. 4, K is 3, I is 2 and J is 1.5).

Regarding **Claim 4**, Tsuzuki further teaches that the row driver includes:

an even row driver for driving an even portion of IxN scan lines in the display area (Tsuzuki, Fig. 4 element 3, Yn1); and

an odd row driver for driving an odd portion of the IxN scan lines in the display area (Tsuzuki, Fig. 4 element 3, Yn2).

Regarding **Claim 5**, Tsuzuki further teaches that MxN pixels are arranged in a delta manner (Tsuzuki, Fig. 4 delta configuration).

Regarding **Claim 9**, Tsuzuki further teaches that the step of scanning the IxN scan line s comprises scanning the IxN scan lines in sequence from top to bottom (Tsuzuki, Fig. 4 scan lines are scanned in a progressive sequence from top to bottom).

Regarding **Claims 10-12,** Tsuzuki in view of Koyama fails to teach scanning the scan lines from bottom to top and providing the data from left to right or from right to left. Since the applicant has failed to disclose that the direction of scanning or providing data provides an advantage, is used for a particular purpose, or solves a stated problem, it is

an obvious matter of design choice to have scanned and provided the data sequentially in any direction. Therefore it would have been obvious to one of ordinary art at the time of the invention to scan from top to bottom or bottom to top and to provide the data from left to right or right to left because it would have accomplished the purpose of displaying the image data equally as well.

Regarding **Claim 13**, Tsuzuki further teaches a timing sequence driving method for a timing sequence control circuit, the timing sequence driving method at least comprising the method for driving the liquid crystal panel of claim 7 (Tsuzuki, Fig. 4, a timing circuit is used to control the timing of the drivers).

Regarding **Claims 14 and 15**, Tsuzuki further teaches that the XT, YT and ZT are red subpixel data RT, green subpixel data GT, and blue subpixel data BT, respectively (Tsuzuki, Fig. 4, RGB).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuzuki (US 5,745,093) in view of Koyama (US 6,380,919) as applied to Claims 1, 2, 4, 5, 7-9 and 13-15 in further view of the applicant's admitted prior art (AAPA).

Regarding **Claim 6**, Tsuzuki in view of Koyama fails to teach a liquid crystal display projector system comprising the liquid crystal panel of Claim 1. The AAPA teaches that it is well known in the art to use liquid crystal display systems in projection systems (AAPA, Pg. 1 paragraph [0010]). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the liquid crystal display panel of

Tsuzuki in a projection system as taught by the AAPA in order to more easily realize large displays.

Response to Arguments

Applicant's arguments with respect to claims 1, 2 and 4-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ke Xiao whose telephone number is (571)272-7776. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629

/Ke Xiao/
Examiner, Art Unit 2629